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The Chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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AIR NAVIGATION INSTRUCTION IN THE TACTICAL UNIT

By Captain Norris B. Harbold, Air Corps

Ed. Note: This article was written as a result of the experience gained by Captain Harbold at the Advanced Air Navigation Training Units at Langley and Rockwell Fields. The views set forth, although concurred in by the officers directly concerned in the conduct of the Navigation Training at Rockwell Field, represent purely the personal ideas of the author and do not constitute an official report.

The mention of the word "navigation" conjures in the mind of the normal pilot visions of intricate and complicated instruments, theories, methods and procedure. Particularly is celestial navigation visioned as the final and occult method of determining position. The fundamental basis of all navigation, whether it be air, marine or terrestrial, is foregotten and relegated to the limbo of the past. Dead-reckoning, deduced-reckoning, educated guessing, or whatever one wishes to call it, is forgotten.

However, when reminded of dead-reckoning, most pilots will step up boldly and declare in unmistakable firmness that they are competent dead-reckoning navigators. They have flown over the whole United States with the greatest of ease. Some will even state that they have never been lost. The latter statement will classify the individual as a phenomenon or one given to exaggeration. Granting that there do exist a few phenomenons, we are still left with a lot of glib-tongued individuals with highly colored imaginations.

Moreover, as a result of close association with the Advanced Air Navigation Training conducted at both Langley and Rockwell Fields in the training of some 100 pilots, we are obliged to disagree with those who have considered themselves dead reckoning navigators and ascribe their success, if any, to a spurious form of pilotage, a minimum of dead-reckoning and considerable good luck.

Of what does Dead Reckoning consist? Let us consider the various items in detail which we should have available and which we should be able to use intelligently. Also, let us try in all our work to reduce those possible errors, which we know are probable and which we can ascertain and tabulate, to the barest minimum.

First, let us consider our maps and hydrographic charts. A prospective navigator should understand the basic differences between the four generally used types of projection, namely, the Lambert Conformal, Mercator, Gnomonic (Great Circle) and Polyconic. He should know when to use each type of map and how to use it. He should know how to draw and measure courses, pick off latitude and longitude, measure distances and determine mean variation on each type of map. With this information our embryo navigator is prepared to use intelligently what is available and prescribe what changes or improvements he thinks necessary, not before. He is also prepared for the next step in his training.

We now consider the airplane and its equipment, and we are confronted with what is probably the most important instrument which, for many reasons, has become known as a "screwy compass."

Our prospective navigator begins to lose this prejudiced concept as he begins to learn more about this instrument. He is taught the basic principles upon which the various types of compasses are constructed. He learns the sources of compass errors, namely, variation, deviation, and lubber line error; and how these errors are corrected or accounted for, but most important, he learns how much these errors can be reduced. The proper installation of the compass is learned, and the proper method of compass compensation. With this information, our prospective navigator is competent to check the installation, compensate and use his compass confidently. He may now be qualified to recommend changes or improvements in existing equipment, but certainly not before.

In the air we are supported in a medium which has no relationship to the ground on which our point of departure and destination are located. However, with the knowledge the navigator has acquired, together with instruction on the effect of wind upon aircraft in flight he can

intelligently deduce his drift correction and ground speed and then check and correct that deduction by pilotage. To avoid rash deductions (or guesses, whatever you like) and to avoid forgetting deductions, our navigator is required to keep a brief log of the flight, on which he keeps a running record of drift corrections and subsequently compass headings, ground speeds and his estimated time of arrival (ETA) at his destination. This is most important.

With the knowledge he has now acquired, our prospective navigator is competent to proceed upon missions in which he can use dead reckoning combined with pilotage with hopes of success. It does not appear too difficult so far, we hope.

At this stage of instruction our navigator will have become acquainted with the fact that reported winds (found by soundings) are seldom of value except directly above the station from which the soundings were made. If he has had occasion to fly over territory where landmarks are few, or over water, he has undoubtedly found that his deductions as to drift correction and ground speed were too faulty to be of material value, and he clamors for help.

Help is forthcoming in the form of various instruments and equipment which are usually classed generally as "gadgets."

To answer the problem of determining drift correction we find that the Air Corps has been the proud possessor, for years, mind you, of several instruments which, by later experiment, were found highly satisfactory under various conditions, though naturally, not the last word. We find these instruments listed under the name Meter Assembly, Drift, Type A-3, Type D-1A. Our navigator experiments therewith and determines for himself the efficiency of these instruments. Over land he finds that all of them will be of material aid at all altitudes under most conditions of light and terrain. Over water he finds that some of them will work as high as 3,000 feet with good light and a broken surface. He also finds that none of them work at night, although some success is had at low altitudes with a spot light. Apparently his problem of determining drift correction is solved to a great extent, and so it is. However, he still does not know what to do about ground speed.

Instruction follows quickly, enabling the solution of this problem. He finds that there are three general methods of determining ground speed: 1. By manual timing of the passage of an object between two grid lines; 2. By the automatic timing by a mechanical gadget, and 3. By solving a wind star using several drift readings.

In the first method, manual timing is found to be inconsistent because of personal error. In the first two methods he finds that accurate altitude is required; in the third method he finds that accurate airspeed is required. A constant indication of accurate altitude, quite apparently, is next to impossible as we have to know the exact altitude of flight and the exact altitude of the terrain over which we are flying. This seems to make the first two methods difficult, to say the least, and so they are.

In the third method, requiring accurate airspeed, he finds that the airspeed meter, which most of us have consulted sheepishly, perhaps, (instead of gliding with that old feel of the airplane coming up through the pants) is rated as one of our most accurate instruments. This instrument, however, must be carefully calibrated to determine installation error and corrected for temperature and altitude. The procedure in calibration is soon determined. All corrections for temperature, altitude and calibration are accomplished by another small gadget (Mark V or VC-1 Computer) in one operation.

Instruction then continues with the Double Drift Method which entails taking two Drift Readings on headings of 45°, respectively, to the original Compass Heading. Then with the True Airspeed, he finds ground speed from a Table, a really simple operation which requires, at the most, two minutes. Such calculations as he finds necessary in finding ground speed and ETA he accomplishes with another interesting gadget known as Type A-1 Dead-Reckoning Computer.

So we find our navigator practicing with his instruments and arriving at his destinations with commendable accuracy, both in direction and ETA. Another step is accomplished and he comes back for more.

Imagine his astonishment when he finds that he is now a D.R. Navigator. But what of pilotage, radio and celestial navigation he will ask, and so will most pilots.

Explanation follows. Pilotage, which includes bearings on recognized objects, Radio Navigation and Celestial Navigation are AIDS to navigation only. Dead-Reckoning is the basis of all navigation. All Marine Navigation, whether it be practiced by the skipper of the "Rex" or "Normandie," or our brothers in arms, the Navy, is based on Dead Reckoning. Granted that improvement in equipment and knowledge of ocean currents has practically reduced the reckoning to knowledge, we still find, sometimes, that the aids fall down and so does the dead reckoning, and vessels go aground. In most cases, however, it will be found that too much dependence was placed upon the aids and not enough upon the basic D.R. Nor are airplanes exempt. How many have landed in cow pastures or crashed because pilotage (visibility) and radio failed?

Operations personnel in Wings, Groups,

Squadrons and Flights are sometimes apt to consider this really simple training as the subject for a special school. It seems that Instrument Flying was considered specialized not long ago; now it is in the Squadron. Why not Navigation?

We now have, as stated before, approximately 100 pilots who have been exposed to this so called Advanced Air Navigation Training. Let us use them. They can be Operations, or Armament, or Engineering or Supply, but let us tag them again - Navigation Officer. Let them be responsible for the accumulation and dissemination of available equipment and information. Let us establish a chain of Navigation Officers. When a Squadron Navigation Officer becomes stumped, he can appeal to the Group, he to the Wing and so on up, so that new equipment and information can find its way down to the lowly wing man through those really interested in navigation.

In the matter of training, Operations are also wont to express firm opinions as to the lack of time, but consulting our training directive we find sixty flying hours allotted to W-2, Air Navigation. Why not use it for Navigation? So, when our wing man, after some ground instruction, which with our present dearth of flying equipment should not be difficult, acquires a little information and interest and submits a cross-country request, it is approved. However, his route and preparation are checked (not always, but just to make sure it is not haphazard) and he is required to submit a complete log of the flight.

If in a single-seater or two-seater, where pilot is also navigator, he may elect to follow a radio beam for some distance. This is all well and good and is noted on the Log. However, not all W-2 should be on a beam. If a multi-seater is used, the pilot is required to take an additional pilot; one acts as navigator while the other pilots, but in any case a complete and detailed Log is required.

At another field, gunnery and bombing are being stressed. Navigation training is hanging on the edge. But wait! Our new navigation officer has a bright idea. The bombing or M.G. range selected is some distance from the home station. By a roundabout method it can be approached without flying over the inhabited country. The Navigation Officer, therefore, suggests to load up at the home station, navigate to the target and bomb. The recommendation is accepted and two phases of training are combined. Everyone is content.

Let us, therefore, not forget or neglect the important aids to Navigation. Pilotage and Radio should be used continually, but used in their correct relationships - as aids. Likewise, celestial navigation is important; not so much at the present time, but as the range of aircraft increases, celestial navigation is becoming a more important aid. Let us, therefore, as the motto of one of our automobile manufacturers so aptly states - keep an eye to the future, but an ear to the ground - and so we may never forget the possibilities of DEAD RECKONING.

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BARKSDALE FIELD PARTICIPATES IN SHREVEPORT'S CENTENNIAL EXPOSITION

Crowds lined along a two-mile route in the Shreveport, La., business district on Saturday morning, June 30th, to witness the gigantic military parade, feature of the Centennial Exposition sponsored by the City of Shreveport, and to view the floats significant of the progress of aviation, prepared and built by Barksdale Field.

Headed by a police motorcade, the two-mile long parade swung into view at 10:20 a.m., and passed between the thronged lines of spectators, who officials and old-timers say formed one of the largest parade crowds in the history of Shreveport.

First came the Beaumont American Legion Drum and Bugle Corps; Governor O.K. Allen and his staff; Colonel G.C. Brant, Commanding Officer of Barksdale Field, and his staff; a series of seven military floats, and squadrons of uniformed men representing the respective organizations of Barksdale Field.

The Barksdale Field floats were led by "Wings of a Century," with Miss Marilyn Lovell as the "Goddess of Aviation." Next in order were the "Wings of Yesterday," bearing a model of the first airplane; "Wings of the World War"; "Wings of the Lone Eagle," showing a replica of Lindbergh's "Spirit of St. Louis," suspended between a miniature New York skyscraper and the Parisian Eiffel Tower; "Wings of Progress," contrasting the ox cart transportation of 1835 with today's streamlined aviation; "Wings of Tomorrow," in which aviators hazard a guess on future airplane construction; and "Wings of Barksdale," symbolizing the spirit of the world's largest airport.

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Machine gun practice is strictly aerial at Hamilton Field these days. While one fast Martin Bomber pulls a tow target through the air at the rate of 200 miles per hour, another equally fast Bomber peppers it with its machine guns. Thus, the pilots of the 7th Bombardment Group are acquiring practice in the air at a moving object which is speeding at the rate of an average airplane.

V-6827, A.C.

COLLIER TROPHY PRESENTED TO CAPTAIN HEGENBERGER

For his solo blind landing, his preparatory work in connection with instrument flying over a period of 15 years, and his subsequent contribution to the advancement of aviation in perfecting the instrument landing system of the Army Air Corps, Captain Albert F. Hegenberger, Air Corps, was awarded the Collier Trophy on July 22nd at the White House at the hands of the President.

President Roosevelt said he followed Captain Hegenberger's career with interest and praised the Air Corps officer's contribution to American flying knowledge.

Among those who witnessed the presentation were Second Assistant Postmaster General Harllee Branch; Brigadier-Gen. Oscar Westover, Assistant Chief of the Air Corps; Major James H. Doolittle; Col. Edgar S. Gorrell, Chief of Staff of the Army Air Service in France during the War and Chairman of the Committee on Awards, and officers of the Army and officials of the Bureau of Air Commerce.

The twentieth award of this Trophy, made annually by the National Aeronautic Association for the greatest achievement in aviation in America, the value of which has been thoroughly demonstrated by actual use during the preceding year, was accompanied by the following citation:

"To Captain Albert F. Hegenberger, United States Army Air Corps, for the development and demonstration of a successful blind landing system.

This blind landing system, first demonstrated by Captain Hegenberger on May 9, 1932, in the world's first solo flight, alone in the plane and depending solely upon instruments from take off to landing, reached complete development and was put into actual use in 1934. It overcomes one of flying's greatest hazards.

Adopted not only by the Army Air Corps but also by the Bureau of Air Commerce, Department of Commerce, it has been accepted as the most practical system developed to date for either military or commercial purposes."

Captain Hegenberger, one of the best versed pilots in the Air Corps in the art of aerial navigation, has rendered distinguished service to his branch and to aeronautics in general. For the memorable first flight over the Pacific from Oakland, Calif., to Honolulu, Hawaii, in June, 1927, in an Army Transport plane, covering a distance of over 2400 miles, when Captain Hegenberger shared the piloting of the plane with Captain Lester J. Maitland, and also acted as navigator, both officers were awarded the Distinguished Flying Cross as well as the Mackay Trophy, the latter given annually for the most outstanding flight of the year by an Army pilot or pilots.

During the greater part of his service in the Air Corps, Captain Hegenberger has devoted himself to the science of aerial navigation. He has the distinction of being the first Army pilot to fly alone in an airplane with a covered cockpit which excluded all outside vision.

This successful flight was the seventh in a series of nine attempts. During the first three flights, observers were carried in the plane who knew nothing of flying. On the seventh flight, Captain Hegenberger took off alone, made two 180-degree turns and landed at the take-off point. He used radio to guide him into the field, to mark for him the point at which to begin his glide and to warn him when he neared the field boundary. He employed a super-sensitive altimeter to indicate his altitude above the landing area. Other aids to flight utilized included artificial horizon, gyro compass, radio compass and standard flight instruments.

On the ground were three radio sets. Sitting in the cockpit which had a shielded cover, cutting off all view outside the plane, he first tuned in on a transmitter distant from the field to simulate cross-country flying. After executing the first 180-degree turn, he tuned in first on a portable transmitter placed 1,000 feet from the border of the field and then on another a mile and a half away. Although flying away from the field, he was able, by lining up the two radio transmitters, to ascertain the correct flight path on which to return for his landing. Executing his second 180-degree turn at a height of 1,000 feet, he began gliding down as he headed for the mile-and-a-half station.

Captain Hegenberger has instructed many Air Corps pilots in the art of flying by instruments alone and, as a result of his energetic efforts in this line of endeavor, instrument flying is now being carried on at every Air Corps flying field.

His most valuable contribution along the line of promoting safety in flight under unfavorable flying conditions was recognized by the War Department, when he was awarded the Oak Leaf Cluster to the Distinguished Flying Cross.

The airworthiness of the Army's instrument landing system as developed by Captain Hegenberger received the hearty indorsement of the Bureau of Air Commerce, Department of Commerce, at the beginning of this year when, after painstaking tests, that governmental agency adopted this system in its entirety.

Captain Hegenberger was born in Boston, Mass., September 30, 1895. He attended the Boston Elementary Schools, the Mechanics Art School, and pursued a course in civil engineering at the Massachusetts Institute of Technology for three years.

On September 8, 1917, he enlisted in the Aviation Section, Signal Corps, receiving his aviation ground school training at the Massachusetts Institute of Technology and his flying training at Ellington Field,

V-6827, A.C.

Houston, Texas. He passed his tests as a Reserve Military Aviator on April 6, 1918, and was commissioned on that date as a second lieutenant.

After brief periods of duty at Ellington Field and at Camp Dick, Dallas, Texas, he was assigned to the School for Aerial Observers at Post Field, Fort Sill, Okla., and subsequently to the Aerial Gunnery School at Taliaferro Field, Hicks, Texas. He graduated as a gunnery pilot on July 5, 1918.

Again Captain Hegenberger found himself back at his old School, the Massachusetts Institute of Technology, this time to pursue a four months' course in engineering, following the completion of which he was assigned to duty in the Equipment Section of the Engineering Division of the Air Corps at McCook Field, Dayton, Ohio. He was Chief of the Instrument and Navigation Branch of the Engineering Division from July, 1919, to September, 1923, when he was ordered to duty in the Hawaiian Department, where he served as Operations Officer of the 72nd Bombardment Squadron and Group Operations Officer of the 5th Composite Group. Upon the expiration of his tour of duty in Hawaii, he returned to duty at McCook Field.

During his stay at this field, and later at Wright Field, to which all Air Corps engineering activities were transferred in 1927, Captain Hegenberger made a number of long-distance flights through fogs or above the clouds, relying on the earth inductor compass to guide him to his destination.

Almost twelve years ago, on September 6, 1923, Captain Hegenberger flew the greater part of the journey from Dayton to Boston completely out of sight of land. Of course, there were no hooded cockpits in those days but, so far as vision of the ground was concerned, the pilot and his passenger, Mr. Bradley Jones, then Navigation Engineer at McCook Field, were not much better off than the present day airman piloting a covered wagon, aerial type.

Despite unfavorable weather conditions, they took off from McCook Field in a DeHaviland plane at ten o'clock and landed at the Boston Airport seven hours and 25 minutes later. The sky was obscured by clouds which stretched from 300 to 7,000 feet altitude. After sighting the Ohio State University at Columbus, the clouds became so dense that the flyers climbed above them and found themselves in clear sunlight a little above 10,000 feet. A solid layer of clouds stretched beneath them. Not a glimpse of a land mark was obtained for a number of hours. The entire State of Pennsylvania was passed over without their obtaining a glimpse of it. Flying by instruments alone, Captain Hegenberger at about 3:40 p.m., estimated that he should be close to the Hudson River, so he descended through the clouds and crossed this body of water not five minutes later. The remainder of the journey to Boston was made under the clouds. The successful termination of this flight demonstrated the efficiency of air navigation instruments even in those early days of Army aviation.

The various navigation flights conducted by Captain Hegenberger aided in a great measure in the development of the earth inductor compass, the instrument on which Colonel Lindbergh relied on mainly during his memorable New York to Paris flight in 1927.

Captain Hegenberger completed a navigational course at the U.S. Naval Air Station at Pensacola, Fla., and he is generally considered one of the best navigation and instrument officers in the service.

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FAST FLYING ACROSS THE CONTINENT

In a long flight, directed by the Commander of the First Wing, to test GHQ equipment, Lieut.-Colonel Clarence L. Tinker, Commanding Officer of the 7th Bombardment Group, Hamilton Field, Calif., flew from that field to Washington, D.C., on July 4th, in 14 hours and 40 minutes. This flight was made via Salt Lake City, Omaha, Neb., and Indianapolis, Ind., with stops at all of these points.

On the return flight, Col. Tinker winged his way from Bolling Field to Hamilton Field in his Bomber, the "Bird O'Prey," on July 9th, in 16 hours and 55 minutes, intermediate stops being made at Indianapolis, Scott Field, Denver and Salt Lake City.

Accompanying Col. Tinker on this flight were Captain Donald J. Keirn, 2nd Lieut. Nathan F. Searles, Air Reserve, and Technical Sergeant Peder Berg, Crew Chief.

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CHANGE IN COMMANDERS AT FRANCE FIELD

Lieut.-Colonel Lewis H. Brereton, Air Corps, Commanding Officer of France Field, Panama Canal Zone, for the past three and one-half years, recently departed for the United States via Pan-American Airways. Col. Brereton has been assigned to the Command and General Staff School, Fort Leavenworth, Kansas, for duty as instructor, and will report at this school the latter part of August.

Lieut.-Colonel Junius H. Houghton, Air Corps, assumed command of France Field on June 20, 1935.

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During the month of June, the Engineering Department of the San Antonio Air Depot, Duncan Field, Texas, overhauled a total of 24 airplanes and 52 engines and repaired a total of 24 airplanes and 37 engines.

DIVERSIFIED GROUP OF FLYING CADETS REPORT AT LANGLEY FIELD

Twenty students (19 Bombardment and one Pursuit) members of the class which graduated from the Air Corps Training Center on June 22nd last, reported for active duty at Langley Field, Va., on July 1st.

"As is the rule with cadets," says the Langley Field Correspondent, "they are a representative and diversified group. Educationally, they range from Ph.D. down, and physically from six feet five to five feet six. Twelve States are represented, California leading with five men. Professionally, they range from globe trotter to artist, but the largest number are engineers, several in the aeronautical field.

Among these new acquisitions are 'Skipper' Adair, South Carolina's contribution to this season's Langley Field Football Team; 'Clancy' Schmid, with two round-the-world and several shorter ocean cruises to his credit; Emil Scott, holder of several Texas State pole vault records in 1932; 'Ace' Williamson, a successful production engineer for Caterpillar Tractor before enrolling at Randolph, and 'Benn Gunn' Pearson, whose altitude of six feet five inches speaks for itself. The remaining members of the group also have their claims for fame, but the above will serve as a cross section of the diversified character of these recently graduated airplane pilots."

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FORMER KELLY FIELD PRIVATE BECOMES COUNTY COURT JUDGE

While a member of the Headquarters Squadron of the Air Corps Advanced Flying School at Kelly Field, Texas, Private William L. Scarborough, 6225683, spent his spare time attending the San Antonio Public School of Law. He was graduated near the head of his class and was admitted to the Texas Bar and licensed to practice in the Federal Courts.

Shortly after this, he was discharged per expiration of term of service, on September 2, 1934, and became the junior member of the legal firm of Houtz and Scarborough at Sinton, Texas. Hon. James V. Allred, the Governor of Texas, recently appointed him a special judge, one of the first assignments being to serve on the County Court bench, San Patricio County.

The rapid rise of this individual from a private in the Air Corps to a civil judgeship is an excellent illustration of what application and energy can accomplish, and should serve as an incentive and as an inspiration to others who aspire to improve their present standing.

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ACTIVITIES OF THE 20TH BOMBARDMENT SQUADRON

The operations of the 20th Bombardment Squadron of late have been of an unusual type. Major Barney M. Giles, Air Corps, arrived from the Air Corps Tactical School on May 31st, and assumed command of the Squadron. On June 11th, the Squadron flew to Mitchel Field with the 2nd Bombardment Group for the purpose of training West Point cadets, during the period June 15th to July 5th. Sixteen pilots and thirty-six enlisted men made the trip, and since the Squadron had only 8 B-6A's and one PT-3, twelve members of the organization drove their automobiles. All personnel reported an enjoyable time.

While at Mitchel Field, 2nd Lieuts. Insman, Dilley and Murphy, Air Reserve, and Flying Cadets Cunningham and Gresham flew by transport to Langley Field. The Reserve Officers were to revert to inactive status for one day and then report for additional active duty, and the Cadets to receive their commissions as second lieutenants in the Air Reserve and report for one year's active duty. They returned to Mitchel Field on July 2nd.

Effective July 27, 1935, Major William B. Wright, Air Corps, was assigned to duty as Air Officer on the staff of the Commanding General, 5th Corps Area, Fort Hayes, Columbus, Ohio, with the temporary rank of Lieut.-Colonel during the period of such assignment.

LIEUT. NELSON JOINS UNITED AIR LINES CORP.

The 11th Bombardment Squadron, Hamilton Field, lost a valuable officer as 2nd Lt. Orvis M. Nelson, Air Reserve, took off for Chicago to accept a position as co-pilot with the United Air Lines Corporation. Lt. Nelson served as the Squadron School Officer and Asst. Operations Officer. He also functioned as the Photographic Officer for the 7th Bombardment Group at Hamilton Field. He regularly flew a mail run while the Air Corps carried the mail in 1934. In April, 1935, Lt. Nelson, accompanied by 1st Lt. Aubrey K. Dodson, brought honor to the 11th Bombardment Squadron and the Air Corps by performing an errand of mercy when he flew over San Pablo Bay, located a fleet of Sea Scouts thought to be in possession of poisoned food, dropped messages of warning, and so saved them from possible death or serious illness.

ASSIGNMENT TO STATIONS OF NEWLY COMMISSIONED AIR CORPS OFFICERS

The 40 ~~early men~~ and two Reserve Officers of the Air Corps, who were recently selected for appointment as commissioned officers in the Air Corps, Regular Army, as a result of the examination conducted in the United States and foreign possessions, April 2-8, 1935, and for which approximately 475 candidates competed, were, under Special Orders of the War Department recently issued, commissioned second lieutenants, with rank from June 30, 1935, and assigned to various Air Corps stations, as follows:

Air Corps Reserve Officers

Daniel E. Hooks to Air Corps Training Center, Randolph Field, Texas.
Raymond P. Todd to Selfridge Field, Mich.

Privates, Air Corps *

To Air Corps Training Center, Randolph Field:

Harry N. Renshaw, Barksdale Field, La.
Bob Arnold, Barksdale Field, La.
John D. Pitman, Barksdale Field, La. (1)
Marvin F. Stalder, Rockwell Field, Calif.
Eyvind Holtermann, Crissy Field, Calif.
Donald N. Wackwitz, Brooks Field, Texas.
Randolph L. Wood, Langley Field, Va. (2)
George H. Macintyre, Crissy Field, Calif.
Mell M. Stephenson, Jr., Maxwell Field, Ala.
Robert S. Fisher, Brooks Field, Texas.
Clarence M. Sartain, Brooks Field, Texas.

To Fort Leavenworth, Kansas:

Lawrence S. Fulwider, Scott Field, Ill.

To Bolling Field, Anacostia, D.C.

Dolf E. Muehleisen, Rockwell Field, Calif.

For duty with General Headquarters Air Force.

To Mitchel Field, Long Island, N.Y.:

Ray W. Clifton, Maxwell Field, Ala. (3)
Thomas F. Langben, Barksdale Field, La.

To March Field, Riverside, Calif.:

Harry Crutcher, Jr., Randolph Field, Texas.
Clair L. Wood, Crissy Field, Calif.
Carl Swyter, Fort Lewis, Wash.
Jasper N. Bell, Crissy Field, Calif.
Joseph C. Moore, Kelly Field, Texas.

To Hamilton Field, San Rafael, Calif.:

Robert E. Jarmon, Crissy Field, Calif.

To Barksdale Field, Shreveport, La.

Noel F. Parrish, Patterson Field, Ohio
Jack M. Malone, Brooks Field, Texas.
Edward M. Gavin, Maxwell Field, Ala.
Charles H. Leitner, Jr., Maxwell Field, Ala.
James H. Price, Maxwell Field, Ala.
James H.C. Houston, Langley Field, Va.
Frank N. Moyers, March Field, Calif.

To Langley Field, Hampton, Va.:

Joseph B. Stanley, Mitchel Field, N.Y.
Russell L. Waldron, Maxwell Field, Ala.
William F. Day, Jr., Mitchel Field, N.Y.
Richard C. Weller, Mitchel Field, N.Y.
Charles B. Harvin, Bolling Field, D.C.
Burton W. Armstrong, Jr., Bolling Field, DC.
Erickson S. Nichols, Mitchel Field, N.Y.
Harry Coursey, Middletown, Pa. Air Depot.

To Selfridge Field, Mt. Clemens, Mich.:

Arnold T. Johnson, Scott Field, Ill. (1)
Edward S. Allee, Langley Field, Va.
Lester S. Harris, March Field, Calif.
Harold L. Neely, Langley Field, Va.

NOTE:

* Except as noted.
(1) Corporal
(2) Sergeant (First Class)
(3) Staff Sergeant

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TEMPORARY PROMOTION OF CHANUTE FIELD OFFICERS.

Effective July 24, 1935, the following-named officers of the Air Corps, stationed at Chanute Field, Rantoul, Ill., were assigned to the duties indicated, and with temporary rank during the period of such assignments, as follows:

To Captain

1st Lieut. Donald W. Norwood, Director, Clerical, Air Corps Technical School.
1st Lieut. Benjamin T. Starkey, Operations Officer.
1st Lieut. George R. Bienfang, Intelligence and Operations Officer, 48th Pursuit Squadron.
1st Lieut. Albert Boyd, Flight Commander, 48th Pursuit Squadron.
1st Lieut. Forrest G. Allen, Flight Commander, 48th Pursuit Squadron.

To First Lieutenant

2nd Lieut. Charles W. Haas, Meteorological Officer.
2nd Lieut. Gordon A. Blake, Communications Officer.

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AIR CORPS OFFICERS DETAILED TO M.I.T.

The following-named Air Corps officers were, under Special Orders of the War Department recently issued, detailed as students, under the provisions of Section 127a, National Defense Act, as amended, to take a course of instruction at the Massachusetts Institute of Technology, Cambridge, Mass.:

1st Lieut. Anthony Q. Mustoe, Engineering Officer, 39th Observation Squadron (Corps and Army), Kelly Field, Texas.

1st Lieut. Floyd B. Wood, Middletown Air Depot, Middletown, Pa.

1st Lieut. Royden E. Beebe, Jr., Engineer Officer, 97th Observation Squadron (Corps and Army), Mitchel Field, N.Y.

1st Lieut. Torgils G. Wold, station complement, Selfridge Field, Mich.

Lieuts. Mustoe, Wold and Beebe are relieved from temporary rank, effective June 7th, 8th and 9th, respectively.

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Technical Sergeant John T. Dee, 61st Squadron, Mitchel Field, N.Y., was placed on the retired list June 30, 1935.

GENERAL FIELD EXERCISE NO. 8
IN CONJUNCTION WITH FIELD ARTILLERY SCHOOL
By Sergeant R. E. Ingmundson

On Monday, June 24th, the First Balloon Squadron, Air Corps, left Post Field, Fort Sill, Okla., for participation in General Field Exercise No. 8. Two Air Corps officers, Major Ira R. Koenig and Captain W.C. Farnum, and a total of 82 enlisted men were taken to the field.

The truck column consisted of two station wagons, two winches, three ½-ton pick-ups, four 1½-ton cargo and two 2½-ton cargo trucks. A minimum of tentage was carried, due to the fact that the whole maneuver was carried out insofar as possible with a view to maximum concealment of the encampment from hostile aircraft. The men bivouacked.

The organization left Post Field at 6:00 a.m., and maneuvered the balloon cross-country to a position between Signal Mountain and West Lake in the Fort Sill Military Reservation, going into concealment there and flying the balloon until 3:00 p.m. that day. Flying conditions were good at the start, but along towards noon the wind started increasing in velocity until at 3:00 p.m., when the organization broke concealment and commenced its maneuver to Cow Creek, Wichita National Forest and Game Preserve, the wind was very gusty, with velocities running up to 45 and 50 miles per hour.

Due to the fact that several "jumps" had to be made before arriving at Cow Creek, it was necessary to fly the balloon from the transportation cable at an altitude of 300 feet. The gusty winds, coupled with the fact that the maneuver was made through hilly country with its corresponding tricky "bumps," made this maneuver exceptionally hard on the men and the balloon. The balloon had a decided tendency to dive. After leaving Purington Gate, the balloon made two bad dives, almost reaching the ground before straightening up again. On the second of these dives, it crabbed so far off-wind that the basket became entangled in the rigging, and when the subsequent jerk came in straightening it up, a whole section of rigging on the right rear metallic vee tore out, pulling and breaking battonets from the rigging band and severing many first and second bridles. It is the general concensus of opinion in the squadron that we were mighty lucky to get the balloon bedded down at Cow Creek because, due to the breakage of so much of the rigging, we expected at any minute to have to break convoy and chase one each free "captive balloom."

Luck was with us, and at 5:55 p.m., we pulled into Cow Creek and bedded the balloon down and prepared camp. The damage to the rigging was speedily repaired by the rigging crew before dark and the balloon was ready to fly the following morning.

It was found by the rigging crew that seven upper first bridles, five lower first bridles and eleven second bridles had become broken in our first day's maneuver. Most of this rigging was the attachment to the rear metallic vee.

Tuesday, June 25th, we remained in bivouac at the Cow Creek encampment all day. The balloon was flown at various times during the day, making observations and reports of friendly and hostile activities. The men made good use of nearby lakes on Cow and Panther Creeks during our stay at Cow Creek, several of them coming up with blistered backs, not to mention numerous "chigger" bites.

Wednesday, June 26th, we put the balloon in the air at daybreak, but were forced to bed it down shortly due to rapidly approaching bad weather, which delayed our scheduled move from the encampment from 9:45 a.m. until 12:00 noon. Towards noon the weather cleared rapidly and the wind subsided, so we broke camp and proceeded to maneuver the balloon to a position one mile west of Purington Gate, going into concealment there at about 1:30 p.m. The balloon was flown from that position until 4:00 p.m., with observations being made on the "Blue" advance and the "Red" retreat. At 4:00 p.m., we maneuvered the balloon through Purington Gate and to a position between West Lake and Signal Mountain (the same position occupied Monday morning) where the organization bivouacked for the night. We flew until dark this day and observed fire for the 1st Battalion, 2nd Field Artillery. Very interesting work - we should do more of that kind.

Thursday, June 27th, we put the balloon up at daybreak, flying from our Signal Mountain position until 9:30 a.m., when we broke camp and maneuvered the balloon to a position adjacent to Four-Mile Crossing, where it was flown until 7:00 p.m., making observations. The balloon was then maneuvered back into Post Field for the night.

Friday, June 28th, we were scheduled to observe actual firing in the South Arbuckle Range, from day-break until about 9:00 a.m. (the completion of the problem), but due to rain, high winds and no ceiling, were unable to complete this morning's portion of the problem.

This is the fifth problem of this nature that this organization has participated in since its arrival at this station in 1929, and we encountered the worst flying weather for the elapsed time of the problem that we ever had to contend with, but at the same time completed more pilot hours than any other problem we participated in, completing 24:45 pilot time, with 14:50 ballast maneuvering time, for a total of 39:35 balloon time for the

problem.

Among humorous events in connection with the problem was the extreme lack of appreciation by the various Field Artillery units of our bugler sounding off first call at 4:00 a.m. Thursday morning at Signal Mountain, as evidenced by many sarcastic comments. Also, the old balloon war-cry of "how you hear me now" reverberated during all phases of the problem.

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UNFORTUNATE AIRPLANE ACCIDENT IN PANAMA

Death claimed the lives of two France Field flyers late Wednesday afternoon, July 3, 1935. First Lieut. Winton S. Graham and 2nd Lieut. George R. McMahon had flown to Rio Hato, Republic of Panama, some eighty miles from France Field, that afternoon in an O-19C observation plane and were returning to France Field, when for some unknown reason they were forced down into the Bay of Panama, near Taboga Island. Apparecently they were immediately drowned. Lieut. Graham's body was recovered on Friday afternoon, July 5th, with the parachute and life belt still fastened to the body and unused. According to the News Letter Correspondent, the belief prevails that unfavorable weather conditions and an unusually heavy rainfall caused the crash. He stated that up until late Saturday afternoon, July 6th, neither Lieut. McMahon's body nor the airplane had been recovered. The body of Lieut. Graham was found floating in the ocean, showing evidences of severe impact.

Search for the missing flyer and the plane had been constantly maintained by all Army planes on the Isthmus. Several Navy airplanes also assisted in the search.

Lieut. Graham's home was at Big Stone Gap, Va. He graduated from West Point in 1933, and from the Air Corps Advanced Flying School, Kelly Field, Texas, in 1934.

Lieut. McMahon's home was at Huntington, West Va. He was an Air Corps Reserve officer, graduating from the Advanced Flying School in 1934.

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FLYING ACTIVITIES AT FRANCE FIELD, PANAMA

Four airplanes from the 7th Observation Squadron and two from the 25th Bombardment Squadron, France Field, Panama Canal Zone, were recently flown on a 200-mile cross-country training mission to Volcan, some 50 miles north of David, Republic of Panama. Originally intended for two days, the flight was extended to three days because of the inclement weather encountered on the return trip. It was necessary to spend the last night in David. On the whole the trip was very successful and enjoyed by all.

During the fiscal year ending June 30, 1935, ninety percent of the maximum flying requirements were flown by France Field pilots, and everyone completed his minimum flying requirements. The News Letter Correspondent states that, in consideration of the limited aircraft at the field and adverse weather conditions proving a handicap to flying the year round, this is an enviable attainment.

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THIRD TRANSPORT SQUADRON ORGANIZED

A new organization is welcomed into the Air Corps, as well as into the San Antonio Air Depot's own circle, in the establishment of the Third Transport Squadron, pursuant to War Department instructions, as an active unit of the Army at that Depot on July 5, 1935. This organization takes the place of the former Third Provisional Transport Squadron, which had been in operation at the Depot as an embryo organization of the Air Transport Service instituted in February, 1933. This organization was commanded successively by Major R.B. Walker, Lts. D.F. Fritch and D.J. Ellinger, with a force of three enlisted pilots for airplane transport duty on detached service at the Depot from other stations.

On the date of the initial organization of the new Squadron, Captain J.P.Richter of the San Antonio Depot was assigned to its command, and the following "veteran" pilots of the transport service on detached service at this Depot were transferred from their former organizations as its first enlisted personnel:

Master Sgt. C.P. Smith from 12th Observation Group Hqrs., Brooks Field, Tex.

Staff Sgt. T.K. Dorsett from 71st Service Squadron, Barksdale Field, La.,

Sergeant A.M. 1st Cl. J.H. Price from 67th Service Squadron, Randolph Field.

On July 11th, Lieuts. J.H. Hicks and D.J. Ellinger, of this Depot, were assigned as Supply Officer and Engineer Officer, respectively, of the new squadron, and seven enlisted men were transferred to it from organizations at Brooks Field, as follows:

Sergeant H.R. Riley from 12th Observation Group Headquarters,

Corporal I.K. Redding from 62nd Service Squadron,

Private 1st Cl., Specialist 3d Cl. F.M. Anthony and Pvt. Specialist 5th Class N.O. Ward from Station Complement,

Private 1st Cl., Specialist 4th Cl. R.L. Cole; Pvt., Specialist 5th Cl. Vance Vostel, and Pvt., Specialist 6th Cl. A.L. Wackerle from 12th Observation Squadron.

On July 17th, Pvt. A.M. 1st Cl. John Gebelin, Jr., from the 53rd School Squadron, and Pvt. L.P. Kleinoeder from the 52nd School Squadron, Randolph Field, both airplane pilots, were transferred to the new Squadron. This occasion is also

noteworthy from the fact that it is the first time in the history of the San Antonio Air Depot that enlisted men were assigned to duty therewith.

During these first few days, of course, the main objective has been to get the unit properly organized and in smooth running order, and much enthusiasm and esprit de corps on the part of its personnel have made an auspicious beginning toward getting the Third Transport Squadron on its way to the fulfillment of the mission for which it was organized.

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RECIPIENTS OF THE COLLIER TROPHY

Elsewhere in this issue of the News Letter is the announcement of the award of the Collier Trophy for the year 1934 to Captain Albert F. Hegenberger, Air Corps, for his development and successful demonstration of the instrument landing system.

This Trophy was given in the year 1911 by the late Robert J. Collier, and since that time it has been awarded annually, except during the years 1917 to 1920, inclusive, to various individuals and organizations who have figured most conspicuously in advancing in a practical way the progress of aviation in America.

Enumerated below are the individuals and organizations who have thus far received the Collier Trophy:

Year	Recipient
1911	Glenn H. Curtiss for hydroaeroplane development.
1912	Glenn H. Curtiss for development and demonstration of the flying boat.
1913	Orville Wright for development and demonstration of the automatic stabilizer.
1914	Elmer A. Sperry for development and demonstration of gyroscopic control.
1915	W. Starling Burgess for development and demonstration of Burgess-Dunne hydroaeroplane.
1916	Elmer A. Sperry for development and demonstration of Sperry Drift Set.
1917) 1918) 1919) 1920)	Not awarded on account of the World War.
1921	Grover C. Loening for development and demonstration of his Aerial Yacht.
1922	Personnel of the U.S. Air Mail Service for their wonderful achievement in completing a year's operation along different routes from coast to coast without a fatal accident.
1923	Pilots and other personnel of the U.S. Mail Service for successfully demonstrating to the world the practicability of night flying in commercial transportation.
1924	U.S. Army Air Service for having accomplished the first aerial flight around the world.
1925	Dr. S. Albert Reed, of New York, for development of the Reed metal propeller.
1926	Major Edward L. Hoffman, Army Air Corps, for his work in developing the parachute, now universally used.
1927	Charles L. Lawrence for the development of the air-cooled engine.
1928	Aeronautics Branch, Department of Commerce, for their development of civil aeronautics in making better landing fields and landing lights, as well as other safety devices.
1929	National Advisory Committee for Aeronautics for its outstanding achievement in the development of the airplane engine cowling.
1930	Harold F. Pitcairn for his development and application of the autogiro.
1931	Packard Motor Car Company for the Packard Diesel engine.
1932	Glenn L. Martin as the world's most important manufacturer of large military airplanes.
1933	Hamilton Standard Propeller Company, of Hartford, Conn., through its Chief Engineer, Frank Walker Caldwell, for development of the controllable pitch propeller.
1934	Captain Albert F. Hegenberger, Army Air Corps, for his development and demonstration of a successful blind landing system.

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CADET MAKES LANDING MINUS PROPELLER

Displaying a cool head and a steady nerve, Flying Cadet F.R. Drake, 55th Pursuit Squadron, cut his switch and chose to ride his ship to a safe landing rather than jump when it threw its propeller at an altitude of 3,000 feet at Barksdale Field, La., on July 19th. Flying a low wing Pursuit plane, model P-26, Cadet Drake was in a formation of six planes. Luckily, the propeller did not strike any of the other ships. His plane dropped sharply, but he righted it and began dipping downward, bringing the craft to a perfect landing.

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Because newspaper articles disclosed his identity as a former German pilot in the World War, Corp. Max Mueller, of Hamilton Field, assistant crew chief of Col. Tinker's Bomber "Bird O'Prey," has received fan mail from all parts of the country.

WEST POINT GRADUATES ASSIGNED TO UNDERGO FLYING TRAINING

A total of 47 members of the class of 277 cadets who graduated from the United States Military on June 12, 1935, were, under recent orders of the War Department, directed to proceed upon the expiration of their graduation leave to Randolph Field, Texas, and report to the Commanding General of the Air Corps Training Center for duty and flying training.

These 47 students, or 17% of the entire graduating class, received commissions in the various branches of the Army, except the Air Corps, as follows: Corps of Engineers, 4; Cavalry, 5; Coast Artillery, 4; Field Artillery, 14; Infantry, 20.

A year of intensive flying training is ahead of these West Point graduates to whom aviation presented a special appeal, i.e., an eight months' primary and basic course at the Primary Flying School at Randolph Field, and a four months' course at the Advanced Flying School at Kelly Field, Texas. Those who succeed in completing the year's course will be given the rating of "Airplane Pilot" and transferred to the Air Corps, while those failing to make the grade will return to the branch of the Army in which they were commissioned upon their graduation from the Military Academy.

It is now 14 years since the policy was inaugurated of assigning West Point graduates to the Air Corps flying schools for training. During the period from 1922 to 1934, inclusive, 801 West Pointers were accepted for flying training, of which number 375 graduated from the Advanced Flying School, or 47%. It would appear from this that slightly less than one-half of the young men mentally and physically qualified to undergo flying training at the Air Corps Training Center are able to complete the course successfully.

The following statistics covering a 13-year period of flying training given to West Point graduates may be of interest:

Year	Total No. of Graduates	Assigned to Air Corps	Pct.	Number graduating from the Advanced Flying School	Pct.
1922	102	16	15.6	8	50.00
1923	261	51	19.5	25	49.21
1924	406	61	15.0	20	32.78
1925	244	42	17.2	9	21.43
1926	152	18	11.8	7	38.88
1927	203	30	14.7	16	53.33
1928	260	77	29.0	53	68.83
1929	297	110	37.0	41	32.27
1930	235	84	35.7	40	47.62
1931	296	92	31.0	43	46.74
1932	258	68	26.3	38	55.88
1933	346	92	26.6	43	46.74
1934	247	60	24.3	32*	53.33
Total	3307	801	24.2	375	46.82

* Scheduled to graduate October 15, 1935

The West Point graduates who will soon wend their way to Randolph Field to try their hand at piloting Army airplanes are enumerated below, as follows:

Class Standing	Name	Home
	Corps of Engineers	
5	Albert J. Shower	Madison, Wis.
9	Jack W. Hickman	McCook, Neb.
12	Leighton I. Davis	Lyndhurst, N.J.
20	George R. Smith, Jr.	Coronado Beach, Fla.
	Coast Artillery	
81	Kenneth I. Curtis	Milwaukee, Wis.
125	James W. Totten	Fort Omaha, Neb.
131	John N. Howell	Margate City, N.J.
145	Pennock H. Wollaston	West Point, N.Y.
	Field Artillery	
6	David C. Wallace	Richmond, Va.
35	James V. Wilson	Elwood City, Pa.
51	Robert M. Stillman	Pueblo, Colo.
57	George S. Eckhardt	Viroqua, Wis.
66	Raymond W. Sumi	Nashwauk, Minn.
74	Sanford W. Horstman	St. John, Kans.
76	David G. Presnell	Atlanta, Ga.
93	Kenneth P. Bergquist	Crookston, Minn.
100	Arthur A. Fickel, Fort	Sam Houston, Texas
104	Downs E. Ingram	McElhattan, Pa.
106	Edgar A. Clarke	Kansas City, Mo.
113	Elmer J. Gibson	Shenandoah, Pa.
115	James H. Walsh	Carbondale, Pa.
116	Walter J. Bryde	Newburgh, N.Y.
	Cavalry	
58	Richard E. Ellsworth	Erie, Pa.
136	Thomas Wildes	Brooklyn, N.Y.
149	Wilhelm C. Freudenthal	Worcester, Mass.
220	Albert A. Matyas	Brooklyn, N.Y.
229	Pelham D. Glassford, Jr.	Washington, D.C.
	Infantry	
86	Joseph G. Russell	Fort Worth, Texas
138	Aaron W. Tyer	Natchez, Miss.
147	Carl T. Isham	Redlands, Calif.
175	Noel M. Cox	Canton, Miss.
182	Charles J. Daly	Pacific Grove, Calif.
183	Samuel C. Mitchell	Westerleigh, N.Y.
188	Lamont Sexton	Lynchburg, Va.
192	John Williamson	Brooklyn, N.Y.
201	Orin H. Moore	Winchester, Tenn.
204	Harvey Bower	Osborn, Ohio
208	Thomas C. Musgrave, Jr.	Atlanta, Ga.
219	Thomas J. Gent, Jr.	Crestwood, N.Y.
233	Maurice M. Simons	Ft. Leavenworth, Kans.
234	Richard C. Hopkins	Topeka, Kans.
251	George E. O'Connor	Yonkers, N.Y.
255	Jack Roberts	New York, N.Y.
257	George M. Jones	Memphis, Tenn.
270	Glenn C. Thompson	Roanoke Rapids, N.C.
271	Samuel B. Knowles, Jr.	Beechhurst, N.Y.
274	Ralph O. Lashley	Richmond, Ind.

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AIR CORPS OFFICERS PROMOTED

The following 2nd Lieutenents of the Air Corps were promoted to 1st Lieutenant with rank July 1, 1935: William A. Schulgen, Daniel B. White, Donald H. Baxter, Samuel O. Redetzke and Roy T. Wright.

LIEUT.-COLONEL HERBERT A. DARGUE

Belonging to a small group of Air Corps officers who were affiliated with Army aviation practically from its inception is Lieut.-Colonel Herbert A. Dargue, now Assistant Commandant of the Air Corps Tactical School, Maxwell Field, Ala. He became associated with aviation while stationed in the Philippine Islands as a second lieutenant of the Coast Artillery Corps. having been detailed to the Aviation Section, Signal Corps, in March, 1913, and serving with this branch in the Islands at Fort McKinley and later at Fort Mills, Corregidor Island.

With an old hydroplane which he kept in repair, he made numerous flights and assisted the Coast Artillery very material-in locating targets invisible from batteries, observed the effect of siege gun firing at these targets, reconnoitered Mariveles and south shores to assist in selecting routes of travel between the shore lines and neighboring points, and conducted successful experiments in sending radio messages from the hydroplane.

At that time an aviation school was conducted at Fort William McKinley, with Lieut. (now Colonel) F. P. Lahm, 7th Cavalry, as instructor. There were six enlisted mechanics on duty at the school and three student officers taking instruction, Lieut. Dargue being one of them. Lieut. Dargue received the rating of Military Aviator, July 19, 1913, and the rating of Junior Military Aviator as of July 22, 1914.

Born at Brooklyn, New York, November 17, 1886, he graduated from the United States Military Academy, June 13, 1911, and was commissioned a second lieutenant of Coast Artillery. His first assignment to duty as an officer of the Army was in the Philippines where, prior to his detail for aviation duty, he served for six months with the 41st Company and for the next eight months with the 138th Company, Coast Artillery Corps.

Leaving the Philippines in January,1915, Lieut. Dargue proceeded for duty at the Signal Corps Aviation School at San Diego, Calif. Considering the type of aircraft utilized in those early days of aviation and the difficulties encountered in piloting them, he accumulated up to that time quite an impressive flying record, making 189 flights for a total flying time of 73 hours and 31 minutes.

In December, 1915, Lieut. Dargue was transferred to duty with the 1st Aero Squadron at Fort Sam Houston, Texas. While assigned to this Squadron he saw service with the Punitive Expedition into Mexico under General Pershing, from March 19 to May 4, 1916, and performed a considerable amount of flying. Piloting airplanes considered wholly unsuited for military operations, these few months of service in Mexico proved very eventful. All officer pilots on duty with the Squadron were constantly exposed to personal risk and physical suffering. Due to the inadequate weight-carrying capacity of the airplanes, it was impossible to carry even sufficient food, water or clothing on many of the reconnaissance flights. During their flights the pilots were frequently caught in snow, rain and hail storms which, due to inadequate clothing, invariably caused excessive suffering. In several instances, the pilots were compelled to make forced landings in desert and hostile country, 50 to 70 miles from the nearest troops. In every case the airplanes were abandoned or destroyed and the pilots, after experiencing all possible suffering due to lack of food and water, would finally work their way on foot, through alkali deserts and mountains, to friendly troops, usually arriving thoroughly exhausted as a result of these hardships.

On one occasion, Lieut. Dargue, accompanied by Captain B. D. Foulois, the present Chief of the Air Corps, as observer, flew from San Geronimo to Chihuahua City to enable the latter to deliver despatches to the American Consul at that point. After Captain Foulois left the plane, Lieut. Dargue took off, in accordance with instructions, to join another army plane which had landed to the north of the town. He was immediately fired upon by four mounted rurales. Fortunately, Captain Foulois heard the shots and succeeded in stopping the firing, but the rurales arrested him and took him to the city jail. Succeeding in getting word of his arrest to the Military Governor of Chihuahua, the latter ordered his immediate release.

After landing alongside the other Army plane, piloted by Lieut. Carberry, from which the observer, the late Captain Thomas F. Dodd, had departed in order to deliver duplicate despatches to the American Consul at Chihuahua City, a large crowd of natives, Carranzista soldiers and officers, collected around both planes, hurling insulting remarks, burning holes with cigarettes in the wings, slashing the cloth with knives in several places, and extracting bolts and nuts from various parts of the planes.

Feeling that the mob would ultimately wreck the planes, Lieuts. Dargue and Carberry decided to fly them to the smelters of the American Smelter and Refining Company, six miles from Chihuahua City. Lieut. Carberry got away without difficulty, but Lieut. Dargue, taking off in the midst of a shower of stones thrown at him by the mob, had only flown a short distance, when the top section of the fuselage flew off, damaging the stabilizer and forcing him to make an im-

mediate landing. He then stood off the crowd without further damage to the airplane or to himself until the arrival of a guard sent by the Military Governor at Captain Foulois' request.

On April 15, 1916, Lieut. Dargue exceeded all previous long-distance flights by accomplishing a reconnaissance mission from Columbus, New Mexico, to Boca Grande, Pulpit Pass, Dublan, Namiquipa and Satevo, involving a total distance of 415 miles. Four days later during a reconnaissance mission from San Antonio, Texas, to Chihuahua City, Lieut. Dargue, accompanied by Captain R.E. Willis, Observer, was forced to land in the hills, due to motor failure. His plane was completely wrecked, but he escaped without injury. Captain Willis, pinned under the wreckage, was considerably bruised. The airplane was burned on the spot, and the two aviators with their personal equipment started to walk to San Antonio, their nearest base, a distance of about 65 miles. Two days later, after constantly suffering hardships due to lack of food and water, they reached San Antonio.

Returning to the Signal Corps Aviation School at San Diego on July 11, 1916, Lieut. Dargue remained there until July 3, 1917. On the 13th of that month, he was transferred to the Field Artillery, and he served with Battery F, 16th Field Artillery, at Fort Robinson, Wisconsin, until the latter part of September, 1917, when he was assigned to duty at the School for Aerial Observers at Fort Sill, Okla.

From August 17, 1918, to October 21, 1918, he was on temporary duty with the A.E.F. in France and England, making a study of the training of pilots, observers and enlisted men. Upon his return to the United States, he was assigned to duty in the Office of the Director of Military Aeronautics, Washington, D.C., as Assistant Chief of Training , for a short period. He then took the course at the Air Service Engineering School at McCook Field, Dayton, Ohio, graduating in 1920. He entered this school with the temporary rank of Lieut.-Colonel, reverted to his former rank of Captain, but was promoted to Major, Air Service, on July 1, 1920, these changes occurring during the reorganization of the Army to its regular peace-time status.

From the Engineering School, Major Dargue returned to Washington, serving for a short time in the Office of the Chief of Air Service as a member of the Advisory Board, then as Chief of the Operations Division and later as Chief of the War Plans Section. This tour of duty was followed by his entering as a student at the Command and General Staff School, Fort Leavenworth, Kansas, from which he graduated with distinction in 1924, returning again to Washington for duty in the Training and Operations Division, Office of the Chief of Air Service.

Major Dargue was selected as Commanding Officer of the Pan-American Flight around South America for which he, as well as the other members of the flight, was awarded the Distinguished Flying Cross, the citation accompanying same being as follows:

"For extraordinary achievement while participating in an aerial flight. Major Dargue, as one of the pilots of the airplane New York and as commanding officer of the Pan American Flight, December 21, 1926, to May 2, 1927, by his untiring energy, broad vision, and technical knowledge assisted materially in the organization of this important expedition. His leadership, skill, sound judgment, and courageous conduct were vital factors in bringing to a successful completion this mission of good will. In the excellent performance of his many important duties, he brought great credit to himself and to the Army of the United States, and contributed to the cause of Pan American amity." The members of this flight were also awarded the Mackay Trophy, tendered annually for the most meritorious flight by an Army pilot or pilots during the year.

During the course of the Pan-American Flight and just prior to landing at Buenos Aires, Argentina, Major Dargue narrowly escaped death, following a mid-air collision with one of the other planes of the flight. Immediately following the collision, the two planes fell together in a violent spin and, as soon as he loosened his safety belt, it was impossible to remain with the plane, so great was the force tending to throw him out. As he left the plane, the parachute became entangled with the wing or the stabilizer. "My parachute ring must have caught on something," Major Dargue stated in his report of the jump, "for I have no recollection of pulling it, and yet my parachute opened just as I was leaving the plane and caught on the wreckage. At the same time I received a violent thud in the left side from striking some part of the plane. I was carried rapidly toward the ground with the wreckage and recall distinctly thinking this was the end. It seemed impossible to escape, but all of a sudden a giant hand held me aloft and I looked above to see a rip in my parachute from skirt to crown and two large holes, the size of the top of an office desk. Several shroud lines were cut and dangled all around. Pieces of plane filled the air and I caught a glimpse of another parachute far above me.*

A double crash, and one plane burst into flames and then I struck the ground

* Lt. E.C. Whitehead, co-pilot.

rather violently. I could not have been very high when my parachute broke away from the wreckage and saved my life, for it seemed only a couple of moments between the opening of the chute and my safe landing."

Shortly following the return of the Pan-American flyers, Major Dargue, in the same type airplane utilized in the South-American flight. made a good will tour of some 70 cities in the United States, embracing 35 States. The City of Ottawa, Canada, was also visited. This flight involved a total distance of approximately 10,000 miles.

Major Dargue remained in the War Plans Section, Office of the Chief of the Air Corps, until August 15, 1928. He then completed the one-year courses at the Army War College, Washington, D.C., and the Naval War College at Newport, R.I., following which he was assigned to duty at Langley Field, Va., as Commanding Officer of the 2nd Bombardment Group. He continued on this duty until August, 1933, when he was assigned as Commanding Officer of the Second Bombardment Wing, Langley Field. On October 18, 1934, he assumed the duties of Assistant Commandant of the Air Corps Tactical School at Maxwell Field, Ala., being promoted on March 4, 1935, to the temporary rank of Lieut.-Colonel during the period of his tenure of this position.

At this writing Lieut.-Colonel Dargue is credited with a total flying time in excess of 4,250 hours.

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AWARD OF CONTRACT FOR BASIC TRAINING AIRPLANES

The Assistant Secretary of War, Hon. Harry H. Woodring, recently announced the award for 42 basic training airplanes; for spare parts, equivalent to 3 airplanes; and for certain data, to the North American Aviation, Inc., Dundalk, Maryland. The amount of the award totals $559,731.80.

The price per plane was $12,100.00, making a total of $508,200.00 for the 42 airplanes. The cost of the spare parts was $36,300.00, and that of the data $15,231.80.

The circular proposal inviting bids for this basic training airplane was issued to the aviation industry on August 22, 1934, with opening date on April 22, 1935.

In accordance with the established practice of the War Department, the airplane for which the award was given was thoroughly tested by repeated flights. The plane is single engined with a maximum speed of 175 miles per hour, and with a service ceiling of 20,000 feet. It has complete radio installation, but no armament. It has a gross weight of 4150 pounds, of which approximately 1150 is its useful load, including pilot and student.

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THE FIELD ARTILLERY SCHOOL CLOSES FOR YEAR

The Field Artillery School, Fort Sill, Oklahoma, closed on Friday morning, June 28th, with the firing of "Lights" and "Mediums" at the fleeing Reds as they left for parts east via North and South Arbuckle.

General Field Exercise No. 8 is the culmination of the school year, and is a problem which embodies all the principles of Tactics and Technique of Artillery as taught at the School.

In order better to be equipped for cooperation in this problem, Flight "E," 16th Observation Squadron, was augmented by three additional observation planes with pilot-observer teams from Brooks Field, also by three A-3's with smoke screen apparatus from Barksdale Field.

At the outset of the problem, three airplanes with pilot-observer teams were designated to act as Blue Observation and the remaining two observation planes with teams to operate as Red Observation. The Attack planes, with the exception of one prearranged smoke mission, operated as Red attack aviation.

With this set up the Division Aviation for Blues as well as Reds operated in a satisfactory manner. The Red attack simulated attacks on troop columns on radio call and were in all cases successful in "annihilating" the Blues to their delay and discouragement.

On June 29th, the visiting airmen and aircraft returned to their home stations to routine duties, while Flight "E" rejoiced at the approaching half day summer schedule and at the successful completion of another year with the Field Artillery School.

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Bulletin No. 3, recently issued by the Headquarters GHQ Air Force, Langley Field, Va., invites the attention of all commanders to the following War Department policies governing the organization, on a clear-cut functional basis, of the various type units of the Air Corps at stations where GHQ Air Force units are located, viz:

a. The Station Complement: At each of the home stations, a station complement, not a part of the GHQ Air Force, will be organized consisting of Air Corps, Quartermaster, Ordnance, Signal Corps, Medical and other service personnel necessary to operate permanently the respective stations. This station complement will form the nucleus of the Corps Area service command upon mobilization and will be organized so as to operate the station on an inactive status when combat units are absent.

b. The Service Squadron: Mobile service squadrons capable of servicing and maintaining the combat units and taking over the administration, operation and maintenance of a field other than the home station from which these combat units may be operating.

c. The Combat Squadron: Highly mobile tactical units consisting only of such personnel and equipment as are essential for their self-sustained operation in the field for short periods of time.

2. The attachment of enlisted men assigned to the GHQ Air Force, for duty with the station complement, is not favored by this headquarters. Such procedure so interlocks the operation of the station complement with that of the GHQ Air Force as practically to preclude operations by units of the GHQ Air Force away from their home stations. It requires a complete reorganization of the station complement when tactical units are sent into the field. It prevents a test both of the GHQ Air Force units and of the station complements. The attachment of these additional men to the station complement prevents a test of the ability of the station complement to operate with a predetermined minimum of required overhead. It withdraws from the tactical units men essential to training for operations in the field.

3. It is felt that the stations at which GHQ Air Force units are located should be reorganized on a functional basis, with a clear-cut line of demarkation drawn between the functions performed by GHQ Air Force units and those performed by the station complement. The operating functions charged to the station complement should be the same whether or not GHQ Air Force units are located at their home stations. The training given service squadrons cannot be sporadic and accomplish the desired results. It must be continuous and habitual if the Air Force is to be in fact an ever-ready striking force. Such reorganization as may be required should utilize to the maximum the personnel and facilities of service squadrons as units, and not as isolated individuals executing station complement functions.

4. In order to properly service test the principles upon which the GHQ Air Force has been established, within the very limited period of time allotted for the purpose, it is the policy of this headquarters that:

a. Combat crews will be organized and trained as units. It is not sufficient that there be a proper total of trained pilots, bombers, gunners, etc. It is essential that trained teams accustomed to working together be developed to man the type of airplane with which the squadron is equipped.

b. Service squadrons, organized and trained, to operate as units are vital to the accomplishment of the Air Force mission. The efficiency of these organizations will be the primary concern of group commanders until such time as they are firmly established and functioning. Efficiency of combat units is of little moment in sustained operations unless properly supported by an efficient supply and maintenance service.

c. In view of the extreme shortage of airplanes that now exists and will continue to exist for the next three years, it is essential that the maximum number possible be kept in commission at all times. To do this, fixed hours of work must give way to accomplishment of objectives. Schedules of calls will be considered a guide and not a mandate for the employment of time. All agencies will be so organized as to be capable of rendering necessary services upon short

notice at any hour of the day or night.

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Brigadier General Henry H. Arnold, Commander of the First Wing, GHQ Air Force, inspected the planes and personnel of Hamilton Field, Calif., on July 12th to insure that the organizations are prepared to conduct field operations for a period of three days. Lieut.-Col. Clarence L. Tinker had placed his command in preparation for this quarterly load test of airplanes with full military equipment, in compliance with an order from the Commanding General, GHQ Air Force. Machine gun and bombing competition featured the test, the pilots dropping all types of bombs and firing ten rounds from each machine gun. The Martin Bombers took off with their full military loads, which averaged 2,000 pounds of bombs plus other impedimenta, with ease about 10:00 a.m. The planes and personnel of Headquarters Flight, 31st, 11th and 9th Bombardment Squadrons participated in the aerial inspection. Test flights of 25,000 feet and above with oxygen masks showed the ability of the Bombers to soar to great heights. All personnel were also subjected to a ground inspection, including the 69th and 70th Service Squadrons.

According to word received from Hamilton Field, the 11th and 31st Bombardment squadrons were scheduled to fly to Salt Lake City on July 22nd as the 7th Bombardment Group's contribution to the concentration of the 1st Wing to be held there; that approximately 19 Martin Bombers were to wing to the Mormon City to enable the pilots to familiarize themselves with the country. Major Harold D. Smith was slated to lead 8 planes of the 31st Bombardment Squadron on these maneuvers. Three days were to be consumed in these training missions with the purpose of stressing the fact that Salt Lake City is one of the centers from which the 1st Wing must be prepared to operate in the defense of the West Coast. Brigadier General Henry H. Arnold was to supervise the problems and Lieut.-Colonel Clarence L. Tinker was to fly in his Bird O'Prey as the commanding officer of the 7th Bombardment Group.

Several of the squadrons stationed at Langley Field, Va., have recently been engaged in operations which were interesting in that they were unusual and were accomplished at bases other than Langley Field. From a tactical point of view, the operations of the 59th Service Squadron, combined with the 96th Bombardment Squadron, both with their complete complement of officers, enlisted men and equipment, are probably the most interesting. They were engaged in the first of a series of tests of the new tables of organization under the GHQ Air Force and have established an operating base at the Richard E. Byrd Airport at Richmond, Va.

The movement from Langley Field began at 7:00 a.m., July 11th, and ended at 10:10 a.m. Actual war conditions obtained throughout the period of the maneuver, with the Service Squadron maintaining the Bombardment Squadron as prescribed in the GHQ directive. All bombs, ranging from 600 to 2,000 pounds, are transported from the rail head and spotted for loading by the Armament Section. Gasoline and oil are also spotted promptly to avoid any delay in the servicing of the ships which are engaged in the tactical missions. Ammunition is inspected and loaded in belts and delivered to the ships.

The problem presented to the several departments of the Service Squadron can more readily be appreciated when it is known that the Bombardment Squadron is performing two or three-hour missions daily for seven days, including both day and night assignments. Each ship is fully armed with guns and bombs and carries a regularly assigned combat crew to man all stations.

It is too early to ascertain definitely the advantages and disadvantages of the new tables of organization under actual field conditions, but tests such as the above will furnish valuable information by which the efficiency of the organization can be increased.

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RECRUITS NEEDED BY HAMILTON FIELD

According to the News Letter Correspondent, Hamilton Field needs 111 recruits. The recruiting party designated to go out and get them consists of 2nd Lieut. James E. Roberts, Air Reserve, First Sgt. Michael Binder, Staff Sergeants Ray C. Clemons, Delno W. Ross and Sergeant Bryan I. Doughty. Their area consists of a tier of counties than run up to the Oregon line, where ranching is the popular pastime.

"Rodeos and frontier conditions abound in this area," continues the Correspondent. "It should furnish some 'Huskies' for the Air Corps. The life of an Air Corps soldier is as exciting and as remunerative as that of a ranch hand."

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An O-19C Observation plane at France Field, Panama, was equipped with a supercharged 10-1 compression ratio motor for high altitude tow target missions. This motor has proven very successful in this high altitude work.

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First Lieut. Kenneth N. Walker, who recently graduated from the Command and General Staff School, Ft. Leavenworth, Kans., reported for duty at Hamilton Field, and was assigned to the 7th Bombardment Group.

V-6827, A.C.

TEMPORARY PROMOTION OF AIR CORPS OFFICERS

To Major

Captain Samuel C. Skemp assigned as a member of the Air Corps Board, Maxwell Field, Ala., June 22, 1935.

Captain Mark R. Woodward assigned as Director of Ground Training, Air Corps Advanced Flying School, July 13, 1935.

Captain Herbert W. Anderson, from duty as Operations Officer, Air Corps Technical School, Chanute Field, Ill., to Director, Armament, at that School, July 24, 1935.

Captain Earl H. DeFord assigned as Chief, Air Intelligence, Air Corps Tactical School, Maxwell Field, Ala., July 30, 1935.

To Captain

1st Lieut. Everett S. Davis assigned as Flight Commander, Air Corps Detachment, Fort Lewis, Wash., June 22, 1935.

1st Lieut. Edwin R. French assigned as Supply Officer, Philippine Air Depot, Nichols Field, P.I., July 16, 1935.

1st Lieut. William A. Matheny assigned as Flight Commander, 21st Observation Squadron, Bolling Field, D.C., July 13, 1935.

1st Lieut. Stanley K. Robinson assigned as Flight Commander, 21st Observation Squadron, Bolling Field, D.C., July 13, 1935.

1st Lieut. Reginald F.C. Vance assigned as Intelligence and Operations Officer, 41st Observation, July 18, 1935.

1st Lieut. Robert W. Douglass, Jr., assigned as Flight Commander, 55th Pursuit Squadron, Barksdale Field, La., July 23, 1935.

1st Lieut. Elmer P. Rose assigned as Engineer and Armament Officer, 6th Composite Group, France Field, Panama, July 26, 1935.

1st Lieut. Clarence T. Mower assigned as Flight Commander, 25th Bombardment Squadron, France Field, Panama, July 26, 1935.

To First Lieutenant

2nd Lieut. Wendell W. Bowman assigned as Communications Officer, 96th Bombardment Squadron, Langley Field, Va., July 30, 1935.

2nd Lieut. Othel R. Deering assigned as Transport Officer, 71st Service Squadron, Barksdale Field, La., July 18, 1935.

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The following-named Air Corps officers, holding temporary increased rank, were assigned to other duties, but retain such increased rank:

Major Robert T. Cronau from 20th Bombardment Squadron to Intelligence and Operations Officer, 2nd Bombardment Group, Langley Field.

Lieut.-Colonel William O. Ryan from assignment as Director to duty as Assistant Director, Air Corps Board, Maxwell Field, Ala.

Captain James S. Stowell from Director, Clerical, Air Corps Technical School, Chanute Field, Ill., to duty as Director, Basic Instruction, that School.

Captain Donald W. Benner from Engineer and Armament Officer, 6th Composite Group, to Adjutant, Panama Air Depot, France Field, C.Z.

Captain Frank H. Robinson from Flight Commander, 25th Bombardment Squadron, to Intelligence and Operations Officer of that squadron.

Captain Thurston H. Baxter from Supply Officer, 20th Pursuit Group, Barksdale Field, La., to Intelligence and Communications Officer, Third Wing, that station.

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OFFICERS RELIEVED FROM TEMPORARY RANK

Major Warren R. Carter from assignment and duty as Chief, Air Intelligence, Air Corps Tactical School, Maxwell Field, Ala., July 29, '35.

Captain Ernest S. Moon as Adjutant, Air Corps Tactical School, Maxwell Field, Ala., and to duty at that station as Student, 1935-36 course, July 29, 1935.

Captain Don W. Mayhue from Intelligence and Communications Officer, 3rd Wing, and from further duty at Barksdale Field, August 5, 1935.

Major Leland W. Miller from Commander, 61st Service Squadron, Mitchel Field, N.Y., July 16, 1935.

1st Lieut. Harold L. Smith from Station Complement, March Field, Calif., and assigned to duty with GHQ Air Force, that field, July 23.

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CHANGES IN STATION OF AIR CORPS OFFICERS

To March Field, Calif.: Major Early E.W. Duncan from Hawaiian Department. Previous orders assigning him to Chanute Field revoked.

To Maxwell Field, Ala.: Captain George H. Sparhawk, 19th Pursuit Squadron, Hawaii. Relieved from temporary rank upon departure.

To Wright Field, Ohio: Captain Edwin R. Page, upon completion tour of duty in Hawaii.

To Rockwell Field, Calif.: Captain Harry G. Montgomery, Jr., 50th Obs. Squadron, for duty with GHQ Air Force. Relieved from temporary rank upon departure from Hawaiian Department. - 2nd Lieut. Dolf E. Muehleisen, assignment to Bolling Field, D.C., revoked.

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PROMOTIONS: to 1st Lieutenant - 2nd Lieuts. William C. Dolan, rank June 21, 1935; Ivan L. Farman, June 22, 1935.

RETIREMENT: 2nd Lieut. Louis A. Vaupre, July 31, 1935, with rank of 1st Lieut. as of July 1, 1935, for disability incident to the service.

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Changes in the duties assigned the following-named Air Corps officers were made, no temporary rank being involved:

Captain William N. Amis from GHQ Air Force, Barksdale Field, La., to duty with Station Complement, that field.

Captain Burton F. Lewis from 1st Bombardment Squadron, Mitchel Field, N.Y., to duty with Station Complement, that station.

1st Lieut. Robert M. Losey from Hqrs. First Wing, March Field, to duty with Station complement, that field, as Meteorological Officer.

Colonel Jacob W.S. Wuest, upon arrival at Rockwell Field, to assume command of Rockwell Air Depot. Previous orders in his case amended.

Names still continue to be entered on the Register of the Caterpillar Club. This year, up to and including July 16th, there were 23 initiations into this mythical organization, and three other members were given second degrees, namely, Captain Richard I. Dugan and Flying Cadet George S. Buchanan, Air Corps, and Lee Gehlbach, noted civilian test pilot and former Air Corps officer who at one time served with the First Pursuit Group at Selfridge Field, Mt. Clemens, Mich.

In the year 1934, up to and including July 16th, there was a total of 51 initiations into the Mystic Order of Caterpillars, or 28 more than for the same period of time this year - an encouraging sign, let us hope.

Up to this writing, 716 names are entered on the Caterpillar Club roster, with the number of jumps recorded as 752. Colonel Charles A. Lindbergh, Caterpillar-in-Chief, has four "hash" marks, or what have you, by virtue of his four emergency parachute jumps; Major Frank O'D. Hunter, Air Corps, three; and 31 others are perfectly content with two each.

In the News Letter of May 15, 1935, it was stated that a total of 706 airmen and airwomen had made emergency parachute jumps up to that time. Since then, ten names have been added, prominent among which is that of Major-General George E. Leach, who now bears the distinction of being the highest ranking Caterpillar.

Those who have joined the Order since April 17th, the latest jump recorded in the News Letter, are listed below, as follows:

No.		Name, Rank and Place of Jump
707	May 6	Lee Gehlbach, civilian test pilot, Ravenna, Ohio.
707*	May 17	Lee Gehlbach, civilian test pilot, Dahlgren, Va.
709	May 27	William A. Matheny, 1st Lieut., Air Corps, Tallassee, Ala.
690*	May 30	George S. Buchanan, Flying Cadet, Air Corps, Montpelier, Indiana.
708	May 11	Frank P. Hunter, Jr., 1st Lieut., Air Corps, Brujas Point, Panama
710	June 21	Hanlon H. Van Auken, Captain, Air Corps, Chesterfield, Mich.
711	June 22	Francis H. McDuff, Flying Cadet, Air Corps, Banning, Calif.
115*	June 22	Richard I. Dugan, Captain, Air Corps, Banning, Calif.
712	June 22	John L. Giles, Technical Sergeant, Air Corps, Banning, Calif.
713	June 27	Armine F. Herold, Major, Air Corps, near Taylortown, La.
714	July 11	William J. Bell, 1st Lieut., Air Corps, Guelph, Ontario, Canada.
715	July 16	George E. Leach, Major General, Conception, Arizona.
716	July 23	Forrest G. Allen, 1st Lieut., Air Corps, Chanute Field, Ill.

NOTE: * second emergency jump.

Captain Richard I. Dugan, it will be noted from the number opposite his name, is one of the early members of the Caterpillar Club, he having made his first jump on November 22, 1928, while a Flying Cadet at Kelly Field, Texas. In his second initiation, he figured in a triple jump with Flying Cadet McDuff and Technical Sergeant Giles. While flying in the vicinity of Los Angeles, Calif., the left motor of the airplane, which was piloted by Cadet McDuff, suddenly burst into flames. According to newspaper reports, Captain Dugan credited Cadet McDuff with having saved his life, stating that McDuff bravely remained at the controls until his two passengers had leaped free of the burning aircraft.

Lieut. Matheny, recipient of the Cheney Award for 1929 for bravery in rescuing a fellow flyer from a burning airplane, stated in his report of the jump that he was forced to resort to his parachute when, flying at night, engine failure occurred when the airplane was over terrain unfavorable for a safe landing.

"Once definitely committed to jumping," he said, "the pilot slowed the ship down, unfastened his belt, hooked his left thumb in the rip cord, pulled his feet up into the seat, grabbed the stick and righted the ship, which had started off to the left, and then dove out head first over the right side. As soon as the sensation of rapid falling hit him he struck his left hand with his right and pushed out. Looking back he saw the white shape of the as yet unfilled parachute being drawn out of its pack. Almost exactly coincident with that, the jar of the opening parachute hit him and he swung free and safe, with absolutely no further sensation of falling. * * The greatest source of bother to the pilot as he left this ship was its extreme instability when flying hands off. There was never any slightest question in his mind as to whether he could find and pull the rip cord or as to the dependability of the parachute. As a matter of fact, finding and pulling the rip cord was automatic without any thought at all by the pilot."

Strange as it may seem, Flying Cadet George S. Buchanan became a second degree member of the Caterpillar Club without even pulling the rip cord of his parachute. He was piloting a Pursuit plane in the vicinity of Montpelier, Ind., when a flare ignited in the container and was burning underneath the ship. Orders were relayed to him by radio to jump, following another radio message instructing him to attempt to release his flares. He failed to receive this latter message, due to poor receptive conditions.

Unaware at the time of the true cause of the fire, Cadet Buchanan attempted to extinguish it by cutting the main line switch and tearing out all the electrical wiring behind the instrument panel. He then slipped the aircraft in an attempt to put out the fire. It was then that he received the relayed message that the plane was still burning and that he should jump.

Leaving the airplane by opening the door on the left side, Cadet Buchanan climbed out on the wing, using the landing wires as a handhold. "I attempted to place my right foot against the side of the fuselage and push myself away," he stated. "The wing was slippery and the position of the aircraft was such that this was impossible to do. I was blown off by the slipstream and struck the stabilizer with my left side. The blow was hard enough to split the ripcord housing and open the parachute without my having to pull the D-ring. When I landed the D-ring was still in the socket."

Major Armin F. Herold, Air Corps, leading the second flight of a two-flight squadron from Barksdale Field, La., in a signal drill, was forced to "bail out" when one of the planes in the formation cut off the rudder and stabilizer of his plane just above the horizontal stabilizer. Immediately his plane started falling in a fast spin.

"I attempted to leave the airplane twice while it was spinning," Major Herold stated, "but was unable to do so because of air pressure from outside. I brought the airplane out of the second spin and opened the cockpit door and reached for landing wires on left side. With switches 'cut' the nose of the airplane dropped and the aircraft picked up speed rapidly, but I succeeded in pulling myself out of the cockpit and hung literally streamlined and suspended from the landing wires. At the speed I was traveling, I feared I might strike the empennage if I let go of the landing wires, so I held on for a short time waiting for the airplane to begin a spin or in some way change direction. My hands were being cut badly by the landing wires, so I finally let go and cleared the tail section of the aircraft without difficulty.

My reactions and feelings were perfectly normal, much to my surprise. There seemed plenty of time for everything I had to so, no hurry or rush, and the thought that I might not get out of the aircraft or the parachute would fail did not once enter my mind. After the parachute opened I was rather confused, as the opening occurred while I was still traveling fast, stunning me to a degree where I was not really normal until after I rested on the ground a few minutes later."

General Leach, Chief of the National Guard Bureau, was flying from Washington, D.C. to Santa Maria, Calif., piloted by Captain Charles M. Cummings. While over desert country in Arizona, the plane caught on fire, believed by Captain Cummings to be due to a leaking gasoline line. According to newspaper reports, Captain Cummings said he told the General "to get ready to jump," but that all that General Leach heard was the word "Jump," and he lost no time in following what he thought were the pilot's directions. The reports also credit the General as saying: "I tumbled like a ball before the chute finally opened, then I fell in the biggest hole outside of the Grand Canyon."

General Leach cut his left arm either in crawling out of the plane , while leaving it or in landing on a rock. He reached Kingman, Arizona, after wandering for some hours through wastelands, and had his wound dressed by a physician.

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GUNNERY PRACTICE BY 35th PURSUIT SQUADRON

The 35th Pursuit Squadron, Major A.E. Waller, commanding, from Langley Field, Va., moved into the Gunnery Camp at Virginia Beach on July 2nd, and remained there until July 12th.

Ten Pursuit ships left Langley Field at 8:40 a.m., and the first tow target mission was fired exactly one hour later. The normal schedule called for ground gunnery at 5:00 a.m., followed by tow target. Firing was generally completed by 10:00 a.m., and after service and maintenance of the airplanes, the remainder of the day was devoted to baseball or swimming.

During the stay, 12,770 rounds of 30 caliber and 870 rounds of 50 caliber ammunition was fired. Nine pilots flew 84 hours on gunnery missions, an average of over nine hours per pilot. Captains Peaslee and Dorr were the only two members of the Squadron to fire record. The former made a score of 713 on ground targets and 114 on tow targets. Captain Dorr made a score of 654 on ground targets and 145 on tow targets.

All who made the trek say that the stay was most pleasant, with the exception of four o'clock breakfast and one violent electric storm. The News Letter Correspondent says: "To those of us who know Virginia Beach and stayed at Langley it was an enviable ten days for the 35th."

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D.F.C. PRESENTED TO CAPTAIN ANDERSON

Captain Frederick L. Anderson, of Hamilton Field, Calif., who won the Distinguished Flying Cross for piloting a burning airplane above the City of San Francisco and delaying his jump therefrom until it could fall harmlessly into San Francisco Bay, received this decoration on July 3rd for his extraordinary heroism. Colonel Roy C. Kirtland, Air Officer of the 9th Corps Area, presented the medal to Captain Anderson at 11:45 a.m. before the entire garrison at Hamilton Field.

Captain Anderson, Caterpillar No. 691, performed the above deed on December 14, 1934.

RESERVES ATTEND TRAINING CAMP

A most interesting and profitable 14-days' training camp for nineteen Air Corps Reserve officers of the 4th Corps Area was held from July 7th to 20th, inclusive, at the Municipal Airport at Atlanta, Ga. Under the able direction of Captain John B. Patrick, Non-Divisional Air Corps Units Instructor, assisted by Lieut. Robert W. Stewart, the Reserve officers were directed to organize themselves into a provisional squadron, with a complete staff, to plan and supervise the execution of all missions, provide for their own mess and attend to all administrative and supply details. The above-named Regular Army instructors acted in an advisory capacity only.

The results of the camp were gratifying. Although only nine planes - one O-25A, two O-1E's and six PT-3's - were available, 300 hours of tactical flying were accumulated, and every pilot soloed on service type airplanes. All flights were actual tactical missions simulating Pursuit, Observation and Attack Aviation problems. The afternoons were devoted to classroom work and instructive lectures by instructors from the Air Corps Tactical School which aroused much interest as to the possibilities of an Air Force for national defense. Also, a general court was appointed and conducted a court martial to illustrate the functions of a military court. The accused was duly initiated into Army life but was acquitted, and the court, breaking all precedents, fined the prosecution, Jack Lanier, for criminal prosecution without grounds for prosecution.

The nineteen officers attending the camp unanimously agreed that their period of 14 days' training was, without exception, the most profitable of their experience. These officers were:

Major Wiley R. Wright, Camp Commandant; Colonel Lee W. Wiggins, Flight Surgeon; Captain W. H. Beatty, 1st Lts. F.L. Gunter, C.J. Weinmeister, C.M. Robertson, E.E. Myers, S.R. Barker, A.J. Lanier, G.A. Holland, G.K. Crain, J.P. Fraim, 2nd Lieuts. M.A. Bateman, H.H. Culler, H.M. Cox, J.G. Nall, A.L. Laney and I. Munroe.

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NEW "DOPE" ON MECHANICS

An Air Corps officer from France Field, Panama Canal Zone, submits, to use his words, "two good ones I picked up from mechanics examination I corrected."

Q. State three dangerous troubles which may result from ice formation in carburetors of a radial type engine.

A. 1. Motor quit.
2. Forced landing.
3. Crackup.

Q. In some engines, why are the two magnetos timed to fire at different positions of piston?

A. One magneto may be placed in a position which requires a longer secondary wire to the spark plug than the other magneto. Thus the one that has the longest wire must fire sooner than the other one with the short wire because the distance the charge must go from magneto to the plug is different and the one furtherest away requires more time to get to its destination.

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PERSONNEL ITEMS

Captain Hugh C. Downey was relieved from assignment and duty with Station Complement, Langley Field, Va., and assigned to duty with the GHQ Air Force, that station.

The assignment of Captain Oscar F. Carlson, on duty at the Hawaiian Air Depot, Luke Field, T.H., was changed from Supply Officer to Adjutant. He retains the temporary rank of Captain.

The assignment of Major James F. Doherty, on duty at the Fairfield, Ohio, Air Depot, was changed from Supply Officer to Executive Officer. He retains the temporary rank of Major.

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NEW CAFETERIA SYSTEM IN 75TH SQUADRON

The 75th Service Squadron, Wheeler Field, T.H., is becoming increasingly popular since the cafeteria system has been introduced as a permanent feature of the mess. A large number of palms and framed photographs showing beautiful Island sights, together with a cascaded fountain and fish pond lend to the mess hall the appearance of the better class of cafeteria. Certain refinements of procedure and routine have been introduced, with the result that men from other squadrons visit the 75th Squadron whenever possible, and it has even influenced requests for transfers.

Among the advantages now enjoyed at the 75th Squadron are napkins, toothpicks and after-dinner mints. It has been found that, when properly operated, this system not only furnishes better and hotter food but results in saving in food and in operating personnel. It seems to result in more leisure meals, which surely has a direct result on the health of the command.

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